



### Monterey Bay National Marine Sanctuary

Established September 18, 1992, the sanctuary spans 6,094 square miles of coastal waters off central California. Within its boundaries, a rich variety of habitats teem with an amazing array of life. Rugged rocky shores, lush kelp forests, a towering offshore seamount, steep underwater canyons and other coastal environments host 34 species of marine mammals, more than 180 species of seabirds and shorebirds, 345 species of fish and an abundance of invertebrates and algae.

#### Our Mission

To understand and protect the coastal ecosystem and cultural resources of Monterey Bay National Marine Sanctuary.



### Welcome

I can't think of a more exciting way to have celebrated our 20<sup>th</sup> year than by opening the doors of our new Sanctuary Exploration Center in Santa Cruz. The grand opening ceremony on July 23 was attended by hundreds of sanctuary supporters who helped us turn this dream into a reality. After we opened the doors on this momentous occasion, nearly 1000 visitors poured

inside to experience state-of-the-art and hands-on exhibits highlighting the sanctuary's extraordinary natural and cultural features.

The center truly embodies the community's passion and commitment towards protecting one of the nation's most significant and stunning coastal environments. Overwhelming support, resources and encouragement from donors, partners, businesses, elected officials and ocean advocates made the project possible, even during this challenging economic time. I extend my heartfelt gratitude to the City of Santa Cruz for contributing the valuable coast-side property and overseeing the building's construction, and to the National Marine Sanctuary Foundation and community leaders for raising more than \$3 million for educational exhibits.

I am also excited about our new public television programming, *Your Sanctuary TV*. Produced in partnership with Access Monterey Peninsula, the show has really taken off in its first year. It is now aired by nearly 80 cable stations across the nation and has already won several awards from the Alliance for Community Media. The show connects people with sanctuaries and features local communities, businesses, organizations and individuals involved in ocean activities and conservation.

Finally I am happy to announce a new process to identify Sanctuary Ecologically Significant Areas (SESAs) in offshore federal waters. SESAs will help direct future research, monitoring and management efforts towards special areas containing diverse, biogenic benthic habitats. Research, conservation and fishing groups have been highly engaged in the process and have provided valuable input to date.

Please accept my deepest thanks to all of you who have taken action to help us carry out our mission, vision and work over the past 20 years. I welcome, appreciate and look forward to your continued support.

Paul Michel  
Superintendent



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### Sanctuary Exploration Center Opens in Santa Cruz

Twenty years after the designation of Monterey Bay National Marine Sanctuary, a grand opening celebration was held in July 2012 for our new 12,000 square ft. LEED Gold visitor center. Overlooking the ocean, the Sanctuary Exploration Center is located in the heart of the Santa Cruz's famed beach area and serves as a premier educational facility for ocean literacy, as well as an information hub for sanctuary eco-tourism and exploration. The state-of-the-art center features engaging interactive and multi-media exhibits to help visitors explore the sanctuary's remarkable marine environment, as well as their personal role in protecting this special underwater treasure.



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### New *Your Sanctuary* TV is a Hit

In collaboration with Access Monterey Peninsula Public Television we produced a hugely successful television program called *Your Sanctuary*. The show is about connecting people with their national marine sanctuaries. *Your Sanctuary* TV features sanctuary communities and businesses dependent upon a healthy ocean as well as the fascinating organizations and people involved in ocean activities. Each show also features a segment on businesses that share our goals of promoting stewardship and marketing of this national treasure. The program has really caught fire and is now aired by nearly 80 cable stations across the nation. In addition *Your Sanctuary* has already won several awards from the Alliance for Community Media. View it via streaming at [ampmedia.org](http://ampmedia.org).



Chad King, MBNMS

### Sanctuary Marine Life Featured in New "SeaPhoto" App

The public can now view a wealth of information about central California's marine life through a new iPhone and iPad application released by the sanctuary. The free "SeaPhoto" app, the first of its kind for the region, includes more than 1,300 photos of marine life along with detailed ecological information. App users can save their favorite photos and share them via Twitter and email. Download it for free from the Apple App store.

### Addressing Ocean Acidification

Recognizing the threat of increasing ocean acidity, staff compiled and summarized the many groundbreaking ocean-acidification research projects underway in the sanctuary. This information will help guide the development of action plans and strategies to address this issue that could vastly change the ocean as we know it. In addition, sanctuary educators have been working to determine the most effective messages and tools to communicate and explain ocean acidification to the public.



NOAA/MBARI

### Identifying Sanctuary Ecologically Significant Areas

Last year we developed a process and criteria to identify Sanctuary Ecologically Significant Areas (SESAs) within offshore federal waters. SESAs will help direct future research, monitoring and management efforts towards special areas containing diverse, biogenic benthic habitats. We are identifying SESAs by using the best available scientific information and are developing extensive GIS data layers to locate remarkable, representative and sensitive habitats. Research, conservation and fishing groups have been highly engaged in the process and have provided valuable input.





Steve Lonhart, MBNMS

### Monitoring Mud and Marshes at Elkhorn Slough

Following the opening of an artificial mouth in 1946, strong tidal flows have continually washed away the muddy banks and salt marshes of Elkhorn Slough. For the past ten years, staff has participated in studies to determine the erosion rates of these important habitats. The average rate of bank erosion along the slough's main channel is 20 inches a year in the upper slough and 12 inches a year in the lower slough. The average width of tidal creeks has increased from eight feet to over 40 feet in the last 70 years. Staff continues to participate in studies to understand habitat changes resulting of tidal erosion.



Unocal

### No Sign of Oil Pollution Threat from Historic Shipwreck

Seven miles off the coast near Cambria, at a depth of 900 feet sits the oil tanker S.S. *Montebello*. The ship was sunk by a torpedo from a Japanese submarine during World War II. Because the vessel was carrying over three million gallons of crude oil, the sanctuary has supported and participated in several explorations to survey the shipwreck and surrounding area for oil. The most recent expedition found no visual evidence of oil left onboard – good news for sanctuary waters and wildlife.

### Helping Coastal Decision-Makers Prepare for Climate Change

Along with a variety of partners, staff supported training workshops to familiarize coastal decision-makers with adaptive planning practices, tools and scientific information to prepare for future climate change impacts along the Monterey Bay coastline. Participants expressed interest in continuing to learn, network and collaborate on preparing for sea level rise and coastal hazard issues in the future.



Robert Schwemmer, NOAA

### New Approach to Water Resource Management

After years in development, the sanctuary has adopted an integrated water management plan for greater Monterey County outlining priorities, strategies and projects for managing the region's water resources. A joint effort of 19 agencies and organizations, the plan will increase regional self-sufficiency and encourage a proactive, leadership role in solving water problems on a local level through collaborative planning. The plan considers disadvantaged communities, climate change and stewardship actions to provide for a reliable long-term and high-quality water supply while protecting the environment.



Chad King, MBNMS

### Scientific Diving to Understand and Protect the Sanctuary

Over the last ten years, the sanctuary diving program has increased from a single diver to six and expanded its role in understanding and protecting sanctuary resources. Science diving has focused on the management of invasive kelp, the biology of an invasive bryozoan and partnering with local academic institutions to study marine protected areas and characterize the kelp forests of Big Sur. Along the way, divers have documented the spectacular diversity of marine organisms in digital images and video. All of this information is shared on the sanctuary's monitoring website at [www.sanctuarysimon.org](http://www.sanctuarysimon.org).



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### Volunteers of the Year

Chris Miller and Sharon McGuire are enthusiastic Beach COMBERs volunteers who survey sanctuary beaches for beach-cast birds and marine mammals. For eight years they have collected a wealth of information about these top predators, providing scientists with a better understanding of our changing coastal environment. Often going beyond the call of duty, they also get assistance for wounded or sick animals, collect evidence of tar balls or oil, call in unusual activities, bring in banded birds, monitor marine debris and report unusual species. One of their most interesting finds was a Cuvier's Beaked whale, a rare and unique species. Little is known of its biology, ecology or food habits, so specimens like these are especially valuable to the scientific community. Chris and Sharon are passionate volunteers and shining examples of how citizens can make direct and meaningful contributions to ocean science and conservation.



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### Managing Coastal Erosion

Erosion rates along the southern Monterey Bay shoreline are the highest in California. A recent sanctuary-led study determined a net benefit of \$1.25 billion over the next century if coastal erosion were allowed to continue in this region, as opposed to the traditional response of seawall construction. Other promising approaches include cessation of sand mining, rolling easements and beach nourishment. While focused on southern Monterey Bay, this report helps clarify the benefits, costs and effectiveness of a range of erosion mitigation measures for the entire California shoreline. To learn more, visit <http://montereybay.noaa.gov/new/2012/erosion.html>



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### Food Safety and Water Quality Forum Held

Along with the Farm, Food Safety and Conservation Network, we hosted a forum bringing together more than 100 farmers, environmentalists, researchers and government officials to collaborate on new strategies for managing both food safety and protection of natural resources. Addressing conflicts between farm food safety and conservation practices is critical to protecting water quality on agricultural lands in the sanctuary's watersheds. A diverse group of participants learned about recent science on this topic and were provided with invaluable networking and problem-solving opportunities.



NOAA/MBARI

### Davidson Seamount Species Draw Attention

A paper published on the color and behavior of a deep-sea anglerfish studied at Davidson Seamount by Monterey Bay Aquarium Research Institute and sanctuary staff drew international interest. More than 114,000 YouTube viewers watched a video released on the subject and news stories were aired by National Geographic and media outlets in Vietnam. In addition a deep-sea bubblegum coral observed and collected at the seamount was described as a new species. The Davidson Seamount was added to the sanctuary in 2009 for its unique and special qualities. Staff has released a technical report assessing threats to the seamount that will help guide future management decisions to protect this underwater treasure.